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Joint Ownership of Transmission

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Joint ownership of transmission facilities is a structural solution that can address many of the access-related issues that Regional Transmission Organizations (RTOs) were intended to address. Proportional ownership by those load-serving entities providing service in the region is an effective means to mitigate the transmission market power of utilities seeking market-based rate authority from the Federal Energy Regulatory Commission (FERC). If the responsibility for building and owning the transmission grid is spread more broadly among entities serving loads in a region, then joint transmission planning will be facilitated, simply because there are more participants at the planning table. If network customers of a dominant regional transmission provider are encouraged to buy in to their load ratio share of the transmission system, transmission usage and ownership will be more closely aligned, and the frictions between transmission-dependent utilities and transmission owners can be reduced.

Public power utilities have participated in jointly-owned transmission arrangements for many years. One model of joint ownership that has worked for public power is investment in a transmission-only company. A second model is joint ownership in a shared system. A third model is joint ownership of individual lines that are planned on a coordinated project basis. The experience of public power utilities in the West—where joint ownership of individual transmission lines is the typical model—is particularly illuminating as it shows the benefits of joint transmission planning as well as joint ownership.

Investment in a Transmission-Only Company

There are two transmission-only companies that are partially owned by public power utilities. These are the American Transmission Company and the Vermont Electric Power Company.

American Transmission Company

American Transmission Co. LLC (ATC) was organized in 2000 and assumed ownership and operation of transmission assets on January 1, 2001. Four investor-owned utilities—Wisconsin Electric Power Company, Madison Gas & Electric Co., Wisconsin Public Service Corp. and Wisconsin Power & Light Co.—transferred their transmission assets to ATC at net book value. In return, the utilities received 50 percent of the assets' value in cash and the remainder as ownership interests in ATC. The fifth founding member, Wisconsin Public Power Inc. (now WPPI Energy), a public power utility that owned no transmission, purchased a 5.7 percent ownership interest in ATC for $17 million. The percentage amount was based on WPPI Energy's proportionate share of electric load in Wisconsin, and the purchase price was based on

the net book value of the transmission facilities transferred to ATC by the other owners. WPPI Energy is a municipal joint action agency that provides full requirements power and energy and other services to its 50 member cities and towns in Wisconsin, Michigan, and Iowa.

Currently, ATC has 28 members (five investor-owned, 17 municipal, and 6 cooperative utility owners) who have contributed some combination of transmission assets or cash to the system. These members include the Upper Peninsula Public Power Agency, which was created to facilitate the participation of seven Michigan municipal utilities in ATC.

ATC has total assets of approximately $2.2 billion, including 9,350 circuit miles of transmission lines and 500 substations. The company is governed by a Board of Directors, which includes four independent directors and a director representing each of the five founding members. The company raises capital by selling bonds and by equity contributions from its members. Its bonds are rated by all three major credit rating agencies: currently ATC's long-term debt is rated "A" by Fitch, "A+" by Standard & Poor's, and "A1" by Moody's.

ATC was created in response to the Reliability 2000 legislation signed into law in October 1999. The legislation represented a compromise: it raised the cap on investor-owned utility investments in non-regulated businesses to 25 percent of utility assets, if the utility voluntarily transferred its transmission assets to a separate transmission-only company that would improve system planning, construct needed transmission facilities, and ensure a more reliable system.

A June 2000 filing with the Wisconsin Department of Financial Institutions established ATC as a limited liability company. This structure was selected in part to facilitate the participation of a diverse mix of utility owners.

ATC is a member of the Midwest Independent Transmission System Operator (MISO), transferring operational control of its transmission facilities to MISO in December 2001. ATC transmission customers began taking transmission service under the MISO Open Access Transmission Tariff in February 2002.

Each year ATC conducts a transmission system assessment; the 2008 assessment identified $2.7 billion in projects needed over the next ten years. Since operations began in 2001, ATC has invested approximately $1.9 billion in transmission infrastructure. (Information on ATC is available at http://www.atcllc.com/)

Vermont Electric Power Company

The idea of a jointly owned transmission-only company is not new. Vermont's investor-owned utilities established Vermont Electric Power Company (VELCO) in 1956 to develop an integrated transmission system in the state. The Burlington municipal utility became a shareholder in the 1960s through conditions placed on nuclear plant licenses to address situations inconsistent with the antitrust laws. However it wasn't until the late 1970s that agreement was reached to allow all of Vermont's municipal and cooperative utilities to acquire shares in VELCO; the agreement forestalled a legislative proposal directing the State of Vermont to take over VELCO.

Vermont's 15 municipal and two cooperative utilities have increased their shares in VELCO over time, finally achieving a load ratio ownership share in 2001. When VELCO needs new equity for its capital program, each shareholder is allowed to invest a proportionate amount based on its load ratio. Shares are owned by the individual municipal utilities, and many obtain financing from Vermont Public Power Supply Authority, the joint action agency in the state.

Today, the VELCO Board includes representatives from a municipal utility, the joint action agency, and a cooperative utility. (Go to http://www.velco.com/Pages/Default.aspx for information on VELCO.)

Ownership in a Shared Transmission System

In shared or joint transmission systems, two or more load-serving utilities combine their transmission facilities into a single system. Examples of public power participation in shared transmission systems are found in Indiana, Georgia, Minnesota, and the upper Midwest region. In the West, public power systems are often joint owners of individual transmission lines.

Indiana

Duke Energy Indiana, Duke Energy Ohio, Wabash Valley Power Association (WVPA), and Indiana Municipal Power Agency (IMPA) own a Joint Transmission System (JTS), an integrated transmission system covering two-thirds of Indiana, part of Ohio and a small part of Kentucky. IMPA, a joint action agency that now serves the power supply needs of 51 Indiana municipal utilities and one municipal utility in Ohio, acquired its interest in the JTS in 1985 through the purchase of transmission facilities from Public Service Company of Indiana (PSI). (PSI subsequently merged with Cincinnati Gas & Electric to form Cinergy, and Cinergy was acquired by Duke Energy Corp. in 2006.) WVPA has had a similar arrangement with PSI and its successor companies since 1983.

IMPA's participation in transmission ownership and the establishment of the JTS followed several years of negotiations between the parties. At the time, PSI was constructing the Marble Hill nuclear plant and had severe financial problems. PSI was looking for co-investors in Marble Hill and invited IMPA to participate. IMPA declined, and countered with the suggestion of investing in PSI's transmission assets.

In November 1985, IMPA executed ownership and licensing agreements with WVPA and PSI. These agreements provide that each utility owns specific lines and substations in the system, but has all rights, as tenants in common, to the use, output and capacity of the entire JTS. IMPA issued $31.6 million in revenue bonds to purchase about seven percent of PSI's transmission assets. If a joint owner's use of the system is more than its investment share, the utility makes payments to one or both of the other owners. This arrangement—owning specific assets, but operating as if the entire system were jointly owned—was used rather than a partnership arrangement, because IMPA is a political subdivision of Indiana, and state law prohibits it from entering into partnership agreements with private entities. IMPA also signed an operating agreement with PSI, providing for IMPA to pay PSI (now Duke Energy) a monthly fee for the operation and maintenance of the IMPA assets.

Duke Energy Indiana, Duke Energy Ohio, WVPA and IMPA jointly plan for JTS system upgrades and expansions. The planning group uses forecasts of total load growth to determine where the need for new transmission is greatest. The planners assign ownership of specific capacity additions among the utilities in proportion to each utility's percent of total load, and each utility then provides the investment money for its assigned portion. The goal is to keep each utility's investment in proportion to its use of the system. IMPA currently owns 4.8 percent of the JTS.

The regional transmission operator, MISO, schedules, manages and oversees operational control of the JTS.

Georgia

Georgia's Integrated Transmission System (ITS) is jointly owned by four Georgia electric utilities: Georgia Power Co., a subsidiary of Southern Company; Georgia Transmission Corp., an affiliate of Oglethorpe Power Corp., which is a generation and transmission cooperative; MEAG Power, a municipal joint action agency; and Dalton Utilities, a municipally-owned utility. A 1975 Georgia statute authorized the creation of MEAG Power, and in 1976 the agency began purchasing transmission assets and ownership interests in generating facilities from Georgia Power to serve the needs of its members. MEAG Power currently provides bulk power to electric utilities owned by 48 cities and one county in Georgia.

Georgia Power has separate, two-party agreements with each of the other three transmission owners, and also has supplemental agreements regarding operations and maintenance of the transmission system. Each utility owns individual transmission assets, but may use all transmission facilities in the system, regardless of ownership, to serve its customers. In 2006, the four owners agreed to waive certain termination rights, so that the agreements will remain in effect at least through December 31, 2027.

Georgia Power operates the transmission network, and each utility is responsible for the operation and maintenance costs of the lines it owns. Each owner maintains an investment in transmission that is in parity with the investments of the other joint owners. Only those transmission facilities that are in service and that have been approved by the other owners are included in calculating the parity formula, which is generally determined each year based on each system's five-year rolling average peak demand. MEAG Power currently owns more transmission than its parity amount, and so receives parity payments from Georgia Power.

Minnesota

In the 1980s utilities in Minnesota signed a series of agreements for sharing of transmission systems (STS agreements) that generally provide for investment in transmission assets in proportion to each utility's load and use of the shared system. By the end of 1983, Southern Minnesota Municipal Power Agency (SMMPA), for example, had signed STS agreements with two investor-owned utilities (Interstate Power and Northern States Power) and with two cooperative utilities (Dairyland Power Cooperative and United Power Association). SMMPA's transmission assets are generally operated and maintained by the agency's partners in the STS agreements. The agreements with the investor-owned utilities (IOUs) were terminated and converted to network transmission service as part of the two IOUs' merger activities.

However, the IOUs continue to operate SMMPA's transmission in their service areas, and SMMPA receives a credit reflecting its investment in each system. SMMPA's joint ownership arrangements with the cooperative systems remain in effect. Today, SMMPA is also a transmission-owning member of the MISO, the regional transmission operator.

Upper Midwest Region (Missouri River Energy Services)

Otter Tail Power (OTP), an investor-owned utility that serves customers in Minnesota, North Dakota and South Dakota, has separate transmission system agreements with Great River Energy (GRE), a cooperative in Minnesota, and with Missouri River Energy Services (MRES), a joint action agency serving public power utilities in Iowa, Minnesota, North Dakota and South Dakota.

The OTP/MRES integrated transmission system began in 1986 when MRES, then known as Missouri Basin Municipal Power Agency, purchased (via its financing agent, Western Minnesota Municipal Power Agency) eleven percent of OTP's transmission system. Otter Tail Power is responsible for the operation and maintenance of the transmission system, and the two utilities jointly plan for system expansions and upgrades.

Under the OTP/MRES agreement, each utility owns specific transmission assets, generally in proportion to its share of load in the system's service area, and each utility has use rights on the system. The OTP/GRE agreement works in a similar way. The two integrated systems partially overlap one another, and the effect of the two agreements is that each of the three utilities has the right to use the overlapping portions of the integrated transmission systems as if they were its own.

Recent Joint Planning Initiatives in the Midwest

Over the last several years, utilities have engaged in joint planning processes to improve transmission infrastructure in the Midwest region. Four new projects, with participation by public power, investor-owned, and cooperative utilities, are underway as the result of the CapX 2020 planning process. A separate regional initiative to establish an independent transmission company (TRANSLink) did not succeed, but two participants in the process – a public power group and an investor-owned utility – are now working together to develop joint transmission projects.

CapX 2020

The CapX 2020 project – short for Capacity Expansion by the year 2020 – began as a joint initiative by major transmission-owning utilities in Minnesota to insure that investment in transmission infrastructure was sufficient to meet projected growth in demand through 2020. Great River Energy, a cooperative utility, and three investor-owned utilities – Minnesota Power, Otter Tail Power, and Xcel Energy – initiated the CapX 2020 project in 2004, and Missouri River Energy Services (MRES), a joint action agency, subsequently joined the group. In December 2004, the five utilities issued an interim report describing the group's planning effort and the CapX 2020 technical studies underway. These projects were considered to be the core projects required to meet future load growth independent of the generation ultimately developed.

Seven additional utilities participate in CapX 2020 projects. These include five public power systems – Central Minnesota Municipal Power Agency, Midwest Municipal Transmission Group, Rochester Public Utilities, Southern Minnesota Municipal Power Agency, and WPPI Energy) – and two cooperative utilities – Dairyland Power Cooperative, and Minnkota Power Cooperative.

The CapX 2020 group announced its Group I projects in 2006. These are three 345-kV transmission lines between Minnesota's Twin Cities area and Wisconsin, North Dakota, and South Dakota; and one 230-kV line in Minnesota. By the end of 2008, utilities had filed with the Minnesota Public Utilities Commission applications for a Certificate of Need for all four projects and Route Permits for two of the projects.

Great River Energy and Xcel Energy are taking the lead on the three 345-kV lines, but other utilities in the group are involved in the permitting process and will assist in the building and financing phases as well. For example, Missouri River Energy Services is participating in both the North Dakota (Twin Cities to Fargo) and South Dakota (Twin Cities to Brookings) projects, and will have a physical ownership percentage in each line. MRES anticipates that the revenue received from its ownership portion of the lines will offset the charges from the Midwest Independent System Operator (MISO) for transmission service.

CapX 2020 utilities are planning Group II projects, and the primary focus is on providing greater access to renewable resources. This will allow utilities to meet the renewable energy standards required by state law. (Information on CapX 2020 is available at http://www.capx2020.com/)

Midwest Municipal Transmission Group

The Iowa Association of Municipal Utilities, Minnesota Municipal Utilities Association, and Central Minnesota Municipal Power Agency formed the Midwest Municipal Transmission Group (MMTG) in 2002. The group's purpose is to help develop an efficient regional transmission system and provide for equivalent transmission treatment of municipal utilities. To that end, MMTG works to ensure that municipal utilities are included in investments in new transmission projects. The goal is for its members to have transmission grid investments in proportion to their transmission use, thereby minimizing the transmission costs for the utilities' ratepayers.

Originally, MMTG sought to participate in a proposed transmission organization – TRANSLink – that ultimately failed. The group then negotiated to obtain transmission rights with investor-owned utilities that had participated in the TRANSLink process. In 2005, MMTG successfully entered into an agreement with one of the utilities, MidAmerican Energy Company. As a result of the agreement, MMTG now works closely with MidAmerican in developing joint solutions to the region's transmission needs. MMTG is involved in the planning process and contributes financially to investments in new transmission.

MMTG also participates in the CapX 2020 regional planning process.

Joint Ownership of Individual Lines in the Western Region

There is a long tradition of collaborative regional planning and joint ownership of major transmission lines in the West, and this has included the participation of public power utilities. Many transmission projects are jointly funded by the utilities that will benefit from the project. Projects built as a single undertaking typically include a percentage allocation of the ownership rights and responsibilities, including the resulting incremental transfer capability, to each participating utility based on capital input. Upgrades to project facilities are treated in the same way. In other cases, the transmission project is jointly planned, and each utility is responsible for separate sections of the project.

The Southwest Model

Joint ownership of generation and transmission projects has played a vital role in the ability of many Southwest utilities to serve rapidly growing customer loads for over 50 years. The result is a highly integrated transmission system that has fostered cooperation and economic coordination among owners. Jointly owned transmission facilities are viable solutions for multiple utilities to deliver power to their native load customers.

The Southwest model of joint ownership generally adheres to the following principles:

1) Transmission lines are owned by the participants as "tenants in common" with each participant owning a pro rata share of the land and common facilities;
2) All costs and liabilities are shared by the participants in proportion to their ownership percentage;
3) One of the owners typically acts as operating agent and takes direction from other owners;
4) Various administrative committees ensure all owners are appropriately involved in the oversight and administration of the project;
5) Pre-established voting processes are used for approval of budgets, major expenditures and significant operational matters;
6) Modifications to the joint ownership agreement must be approved by all owners;
7) Owners indemnify each other and the operating agent;
8) Owners have reasonable rights to approve assignment of another owner's share to a third party.

Two examples of joint ownership in the Southwest are the 500-kV transmission lines from the Palo Verde (PV) and Navajo generating stations in Arizona. The lines from PV into Phoenix were constructed as part of the PV project and are owned by Arizona Public Service Co. (APS), Salt River Project (SRP), Public Service Co. of New Mexico, and El Paso Electric Co. The plant itself and the switchyard are owned by these four utilities and the Los Angeles Department of Water & Power (LADWP), Southern California Public Power Authority (SCPPA), and Southern California Edison Co.

The Navajo South transmission lines that run from the Navajo plant to the Moenkopi switching station are owned by the six owners of the plant: SRP, APS, LADWP, the U.S. Bureau of Reclamation (USBR), Tucson Electric Power Co., and Nevada Power Co. Three of these utilities, Nevada Power, USBR and LADWP, built the Navajo West system that runs west from the plant.

The Transmission Agency of Northern California

The Transmission Agency of Northern California (TANC) was established in 1984 as a joint powers agency to plan, design, construct, own, and operate high voltage electric transmission lines in the west, the first of which is the California-Oregon Transmission Project (COTP), a 340-mile, 500-kV transmission line between southern Oregon and central California. TANC now owns about 87 percent of the project, and is the project manager, coordinating the use of COTP facilities among project participants. Other participants in COTP are Western Area Power Administration, Pacific Gas & Electric Co., City of Redding, and the Carmichael Water District.

TANC's mission as a joint powers agency formed under the laws of California is to provide electric transmission or other facilities for its public power members' use. Its members include the California cities of Alameda, Biggs, Gridley, Healdsburg, Lodi, Lompoc, Palo Alto, Redding, Roseville, Santa Clara and Ukiah, as well as the Sacramento Municipal Utility District, the Modesto Irrigation District, and the Turlock Irrigation District. The Plumas-Sierra Rural Electric Cooperative is an associate member.

TANC has begun development work on a new initiative – the TANC Transmission Program (TTP) – to consider construction of over $1.2 billion in 500-kV and 230-kV facilities in northern California. TANC has encouraged the participation of Western Electricity Coordinating Council and WestConnect members, and currently, there are about twenty entities participating in technical review of the planning work. In October 2008, TANC announced an agreement with Western Area Power Administration to partner in the development of the TTP, consisting of 600 miles of high-voltage transmission that will improve reliability and provide increased access to renewable resources. (Information on TANC is available at http://tanc.us/)

The Green Path

The Green Path project represents a coordinated set of additions and upgrades to transmission facilities. IID Energy initiated the project to increase access to significant geothermal and other renewable energy resources in the Imperial Valley and to eliminate existing transmission constraints in the southern region of California. IID Energy is upgrading capacity and building new lines on its own, and has also embarked on two substantial joint ventures.

The Green Path North, a joint project between IID Energy, LADWP, and SCPPA, will bring renewable power to the Los Angeles region. It includes two proposed substations and a new high-voltage transmission line. Under current plans, IID Energy and SCPPA will each own eight percent of the capacity and common facilities, and LADWP will own the remaining 84 percent.

IID Energy, Arizona Public Service, Salt River Project, and the Welton-Mohawk Irrigation & Drainage District are coordinating plans to construct a 500-kV transmission line to connect Palo Verde to the North Gila Substation. In addition, IID Energy plans to construct a 230-kV line between North Gila and Highline Station.

The Role of Regional Planning in the West

The Western Interconnection has a long history of broad participation in regional and sub-regional planning processes. This inclusive approach results in a number of projects addressing the needs of multiple participants, including public power utilities. Because of the success of the planning groups and participation models, projects move from planning to construction into service on a reasonable timetable.

WestConnect

WestConnect is a voluntary association of transmission-providing utility companies in the southwestern, Sierra Nevada and Rocky Mountain areas of the United States. WestConnect's transmission planning effort supports the coordination of the three subregional planning groups operating within the WestConnect area and the performance of their respective studies. These subregional planning groups include the Southwest Area Transmission Planning Group (SWAT), the Colorado Coordinated Planning Group (CCPG), and the Sierra Subregional Planning Group (SSPG).

Over the next ten years, utilities in the WestConnect planning area have plans for 140 new or rebuilt/upgraded transmission projects with a combined approximate length of 6,171 miles, 43 transmission substations, and 27 transmission-class transformers, as well as 16 other transmission enhancement projects, at an estimated 10.2 billion dollar capital cost.

Examples of jointly-developed transmission facilities currently being planned and built in the WestConnect planning area include:

- Hassayampa-Pinal West and Pinal West-Pinal Central 500-kV transmission lines in Arizona – approximately 80 miles. Participants include investor-owned Tucson Electric Power Company, Salt River Project, Southwest Transmission Cooperative, and Electrical Districts 2, 3 and 4 in Pinal County.
- Sun Valley-TS9 500-kV transmission line in Arizona – approximately 40 miles. Participants include Arizona Public Service Company, Salt River Project, and Central Arizona Water Conservation District.
- San Luis Valley-Calumet 230-kV transmission line in Colorado – approximately 93 miles. Participants include investor-owned Public Service Company of Colorado and consumer-owned Tri-State Generation and Transmission Cooperative, Inc.
- SunZia Southwest Transmission Project from New Mexico to Arizona – approximately 460 miles, and up to two 500-kV interstate transmission lines. Participants include independent transmission company SunZia Transmission LLC, which includes Tucson Electric Power Co. as a partner, and Salt River Project.

Rocky Mountain Region

In 2003, the governors of Utah and Wyoming formed the Rocky Mountain Area Transmission Study (RMATS) to identify potential generation projects and the transmission improvements needed to support these projects. A specific purpose of the RMATS plan was to provide transmission from resource-rich coal and wind states to load centers in population-dense states. The RMATS area includes the states of Colorado, Idaho, Montana, Utah and Wyoming.

The group's September 2004 recommendations included three transmission projects within the RMATS area. The Wyoming Infrastructure Authority (WIA), a state agency created in 2004 to improve the state's transmission capabilities, is developing one of these projects with Trans-Elect Development Company LLC and the Western Area Power Administration. The project is the Wyoming-Colorado Intertie project (WCI) – a 345-kV line from the Powder River Basin in Wyoming to northeast of Denver – designed to relieve congestion on the TOT-3 line. The technical, design, cost, and routing studies to form the project's development plan have been completed. WCI participants conducted an auction for capacity on the line and in August 2008 announced that 70 percent of the line's capacity had been awarded to Duke Energy Ohio and GreenHunter Wind. Qualified entities can apply for the remaining capacity. (Information on WCI is available at http://www.wyia.org/wci)

The 2004 RMATS report also recommended two new 500-kV lines to increase the region's export capability and identified five possible paths for the lines. Since then, several groups have proposed extensive transmission projects to export power from the RMATS area to California and the southwest.

One example is the High Plains Express (HPX) transmission project, which would extend the western region's 500-kV transmission system to connect Wyoming, Colorado, New Mexico and Arizona. Seven utilities (including three public power utilities: Colorado Springs Utilities, Platte River Power Authority, and Salt River Project), three state agencies, and an independent transmission company signed a memorandum of understanding to conduct a feasibility study for the project. The study, issued in June 2008, found that two 500-kV lines could carry up to 4,000 megawatts of power. Benefits include improved reliability, economic development, and the ability to increase the use of renewable energy. (Information on HPX is available at http://www.rmao.com/wtpp/HPX_Studies.html)